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- (4) Sea-based stations may utilize antennas mounted not more than 7 meters (20 feet) above a man-made supporting structure, including antenna structures.
- (5) Continuous carrier operations are prohibited on these frequencies.
- (6) Unless specified elsewhere in this part, licensees as of August 5, 1999, licensed for operations with an emission designator wider than 11.25 kHz on low power frequencies that are subject to an authorized bandwidth of 11.25 kHz, may obtain primary status with respect to co-channel licensees by supplying their coordinates to the Commission. These licensees will continue to operate on a secondary basis with respect to adjacent channel licensees. Additionally, these licensees may continue to operate with an authorized bandwidth wider than 11.25 kHz on such low power frequencies, subject to the provisions of §90.209(b) of this chapter.
- (7) Unless specified elsewhere in this part, licensees as of August 5, 1999, licensed for operations with an emission designator wider than 11.25 kHz on frequencies that are subject to an authorized bandwidth of 11.25 kHz, which are not low power frequencies, may obtain primary status with respect to cochannel licensees by modifying their license to low power frequencies, supplying their coordinates to the Commission, and otherwise complying with the conditions of paragraphs (b) through (g) of this section. These licensees will continue to operate on a secondary basis with respect to adjacent channel licensees. Additionally, these licensees may continue to operate with an authorized bandwidth wider than 11.25 kHz on such low power frequencies, subject to the provisions of §90.209(b) of this chapter.
- (8) Applicants proposing to operate with an authorized bandwidth wider than 11.25 kHz, on low power frequencies that are subject to an authorized bandwidth of 11.25 kHz, may be licensed on a secondary, non-interference basis. Such applicants are subject to the conditions of paragraphs (b) through (g) of this section and the provisions of §90.209(b) of this chapter.

[68 FR 19461, Apr. 21, 2003; 68 FR 55319, Sept. 25, 2003, as amended at 69 FR 4254, Jan. 29,

§ 90.269 Use of frequencies for selfpowered vehicle detectors.

- (a) Frequencies subject to §90.20(d)(22) may be used for the operation of self-powered vehicle detectors by licensees of base/mobile stations in the Public Safety Pool in accordance with the following conditions:
- (1) All stations are limited to 100 milliwatts carrier power and 20K00F7W, 20K00F7X, 20K00F8W, 20K00F8X, 20K00F9W or 20K00F9X emissions. The frequency deviation shall not exceed 5 kHz. No more than two 30 ms. pulses may be emitted for each vehicle sensed.
- (2) The transmitters must be crystal controlled with a frequency tolerance of plus or minus .005% from -20° to plus 50 °C. They must be certificated.
- (3) The total length of the transmission line plus antenna may not exceed one-half wavelength and must be integral with the unit.
- (4) All operation shall be on a secondary, non-interference basis.
 - (b) [Reserved]

[48 FR 54982, Dec. 8, 1983, as amended at 54 FR 38681, Sept. 20, 1989; 62 FR 18929, Apr. 17, 1997; 63 FR 36610, July 7, 1998]

§ 90.273 Availability and use of frequencies in the 421-430 MHz band.

The frequency bands 422.1875-425.4875 MHz and 427.1875-429.9875 MHz are available for use in the Detroit, Michigan and Cleveland. Ohio areas. The 423.8125–425.4875 MHz 428.8125-429.9875 MHz are available for use in the Buffalo, New York area. Sections 90.273 through 90.281 address the specific rules applicable to these bands. Use of these bands is also subject to the general technical standards and application procedures contained in other subparts of part 90. The technical standards applicable in this band are the same as those contained in subpart I of part 90 for the 450-470 MHz band. Private land mobile use of these frequencies is subject to accepting any interference from Federal Government radiolocation operations.

(a) The following tables list frequencies available for assignment in the Public Safety and Industrial/Business Pools as indicated. In the tables, the Public Safety Pool frequencies are denoted as "PS" and the Industrial/

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Business Pool frequencies are denoted as "IB." The frequencies 422.19375 MHz through 424.99375 MHz are paired with frequencies 427.19375 MHz are paired with frequencies 427.19375 MHz through 429.99375 MHz, respectively. Only the lower half of each frequency pair, available for base station operation, is listed in the tables. Corresponding mobile and control station frequencies are 5 MHz higher than the base station frequency. The frequencies 425.000 through 425.48125 are unpaired and are available for either single frequency dispatch or paging operations.

TABLE 1—CHANNELS AVAILABLE IN DETROIT AND CLEVELAND AREAS ONLY

Frequency (MHz)	Pool in which assigned
Paired channels:	
422.19375*	IB
422.200	IB
422.20625*	IB
422.21250	IB
422.21875*	IB
	IB
422.225 422.23125*	IB
	IB
422.23750	IB
422.24375 *	
422.250	IB
422.25625 *	IB
422.26250	IB
422.26875 *	IB
422.275	IB
422.28125 *	IB
422.28750	IB
422.29375 *	IB
422.300	IB
422.30625 *	IB
422.31250	IB
422.31875 *	IB
422.325	IB
422.33125 *	IB
422.33750	IB
422.34375 *	IB
422.350	IB
422.35625 *	IB
422.36250	IB
422.36875 *	IB
422.375	IB
422.38125 *	IB
422.38750	IB
422.39375 *	IB
422.400	IB
422.40625 *	IB
422.41250	IB
422.41875 *	IB
422.425	IB
422.43125 *	IB
422.43750	İB
422.44375 *	IB
422.450	IB
422.45625 *	IB
422.46250	IB
422.46875 *	IB
422.475	IB
422.48125*	IB
422.48750	IB
422.49375*	IB
422.500	IB
722.000	טו

TABLE 1—CHANNELS AVAILABLE IN DETROIT AND CLEVELAND AREAS ONLY—Continued

Frequency (MHz)	Pool in which assigned
422.50625 *	IB
422.51250	IB
422.51875*	IB
422.525 422.53125*	IB IB
422.53750	IB
422.54375 *	IB
422.550	IB
422.55625* 422.56250	IB IB
422.56875 *	IB
422.575	IB
422.58125 *	IB IB
422.58750 422.59375*	IB
422.600	IB
422.60625*	IB
422.61250 422.61875*	IB IB
422.625	IB
422.63125 *	IB
422.63750	IB IB
422.64375 * 422.650	IB
422.65625 *	IB
422.66250	IB
422.66875 *	IB IB
422.68125 *	IB
422.68750	IB
422.69375 *	IB
422.700 422.70625*	IB IB
422./1250	IB
422.71875 *	IB
422.725	IB IB
422.73125* 422.73750	IB
422.74375 *	IB
422.750	IB
422.75625* 422.76250	IB IB
422.76875*	IB
422.775	IB
422.78125*	IB
422.78750 422.79375 *	IB IB
422.800	IB
422.80625 *	IB
422.81250 422.81875*	IB IB
422.825	IB
422.83125*	IB
422.83750	IB
422.84375 * 422.850	IB IB
422.85625*	IB
422.86250	IB
422.86875 *	IB
422.875 422.88125*	IB IB
422.88750	IB
422.89375 *	IB
422.900	IB
422.90625 * 422.91250	IB IB
422.91875*	IB
422.925	IB
422.93125*	IB
422.93750	IB

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TABLE 1—CHANNELS AVAILABLE IN DETROIT AND CLEVELAND AREAS ONLY—Continued

TABLE 1—CHANNELS AVAILABLE IN DETROIT AND CLEVELAND AREAS ONLY—Continued

Frequency (MHz)	Pool in which assigned	Frequency (MHz)	Pool in which assigned
22.94375 *	IB	423.38125 *	PS
22.950		423.38750	
		423.39375*	
22.95625*			
22.96250		423.400	
22.96875 *		423.40625*	
22.975	IB	423.41250	
22.98125 *	IB	423.41875 *	
22.98750	IB	423.425	PS
22.99375 *	IB	423.43125 *	PS
23.000		423.43750	PS
23.00625 *		423.44375 *	
		423.450	
23.01250		423.45625*	
23.01875 *			
23.025		423.46250	
23.03125 *	PS	423.46875 *	
23.03750	PS	423.475	
23.04375 *	PS	423.48125 *	PS
23.050		423.48750	PS
23.05625 *		423.49375 *	PS
		423.500	
23.06250		423.50625 *	
23.06875 *			
23.075		423.51250	
23.08125 *	PS	423.51875 *	
23.08750		423.525	
23.09375 *		423.53125 *	PS
23.100		423.53750	PS
		423.54375 *	
23.10625 *		423.550	
23.11250		423.55625 *	
23.11875 *	PS		
23.125	PS	423.56250	
23.13125 *		423.56875 *	
23.13750		423.575	
23.14375 *		423.58125 *	PS
		423.58750	PS
23.150		423.59375 *	
23.15625 *		423.600	
23.16250		423.60625 *	
23.16875 *	PS		
23.175	PS	423.61250	
23.18125*		423.61875 *	
		423.625	
23.18750		423.63125 *	PS
23.19375 *		423.63750	PS
23.200		423.64375 *	PS
23.20625 *	PS	423.650	
23.21250	PS	423.65625*	
23.21875 *			
23.225		423.66250	
		423.66875 *	
23.23125 *		423.675	
23.23750		423.68125 *	
23.24375 *		423.68750	
23.250		423.69375 *	PS
23.25625 *		423.700	
23.26250		423.70625 *	
23.26875 *		423.71250	
		423.71875*	
23.275			
23.28125*		423.725	
23.28750		423.73125*	
23.29375 *	PS	423.73750	
23.300		423.74375 *	PS
23.30625 *		423.750	
		423.75625 *	
23.31250		423.76250	
23.31875 *		423.76875 *	
23.325			
23.33125 *	PS	423.775	
23.33750		423.78125 *	
23.34375 *		423.78750	
		423.79375 *	PS
23.350		423.800	
23.35625 *		423.80625 *	
23.36250		7EU.UUUEU	. 1
23.36875 *		*This frequency will be assigned with a	

^{*} I'his frequency will be assigned with an authorized bandwidth not to exceed 6 kHz.

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TABLE 2—CHANNELS AVAILABLE IN BUFFALO, DETROIT AND CLEVELAND AREAS

TABLE 2—CHANNELS AVAILABLE IN BUFFALO, DETROIT AND CLEVELAND AREAS—Continued

DETROIT AND CLEVELAND	AREAS	DETROIT AND CLEVELAND AREA	S—Continue
Frequency (MHz)	Pool in which as- signed	Frequency (MHz)	Pool in which a signed
Paired channels:		424.250	PS
423.81875 *	PS	424.25625 *	PS
423.825	PS	424.26250	PS
423.83125 *		424.26875 *	
423.83750		424.275	
423.84375*		424.28125*	PS
423.850		424.28750	
423.85625 *		424.20730	
423.86250	PS	424.29375*	PS
		424.300	
423.86875 *	PS	424.30625 *	
423.875		424.31250	
423.88125*	PS	424.31875 *	
423.88750	PS	424.325	
423.89375 *	PS	424.33125*	
423.900	PS	424.33750	
423.90625 *	PS	424.34375 *	PS
423.91250	PS	424.350	PS
423.91875 *	PS	424.35625 *	PS
423.925	PS	424.36250	PS
423.93125 *	PS	424.36875 *	PS
423.93750	PS	424.375	PS
423.94375 *	PS	424.38125*	PS
423.950	PS	424.38750	PS
423.95625 *	PS	424.39375*	PS
423.96250	PS	424.400	IB
423.96875 *	PS	424.40625*	IB
423.975	PS	424.41250	IB
423.98125 *	PS	424.41875 *	IB
423.98750	PS	424.425	IB
423.99375 *	PS	424.43125 *	IB
424.000	PS	424.43750	IВ
424.00625 *	PS	424.44375 *	IB
424.01250	PS	424.450	IB
424.01875 *	PS		IB
		424.45625 *	
424.025	PS	424.46250	IB
424.03125 *	PS	424.46875 *	IB
424.03750	PS	424.475	IB
424.04375 *	PS	424.48125*	IB
424.050	PS	424.48750	IB
424.05625 *	PS	424.49375 *	IB
424.06250	PS	424.500	IB
424.06875 *	PS	424.50625 *	IВ
424.075	PS	424.51250	IВ
424.08125 *	PS	424.51875 *	IB
424.08750	PS	424.525	IB
	PS		IB
424.09375*		424.53125 *	
424.100	PS	424.53750	IB
424.10625*	PS	424.54375 *	IB
424.11250	PS	424.550	IB
424.11875 *	PS	424.55625 *	IB
424.125	PS	424.56250	
424.13125 *	PS	424.56875 *	IB
424.13750	PS	424.575	IB
424.14375 *		424.58125 *	IB
424.150	PS	424.58750	IB
424.15625*		424.59375*	
424.16250		424.600	
		424.60625 *	
424.16875*			
424.175	PS	424.61250	
424.18125*		424.61875*	
424.18750		424.625	
424.19375 *		424.63125 *	IB
424.200		424.63750	
424.20625 *		424.64375 *	
424.21250		424.650	
424.21875*	PS	424.65625*	
424.225	PS	424.66250	
424.23125*	PS	424.66875 *	
424.23750	PS	424.675	
424.24375 *	l PS	424.68125 *	l IB

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TABLE 2—CHANNELS AVAILABLE IN BUFFALO,

TABLE 2—CHANNELS AVAILABLE IN BUFFALO,

Frequency (MHz)	Pool in which as- signed	Frequency (MHz)	Pool in which as- signed
424.68750	IB	425.11875 *	IB
424.69375 *	IB	425.125	IB
424.700	IB	425.13125 *	IB
424.70625*	IB	425.13750	iB
424.71250	İB	425.14375 *	İB
424.71875 *	IB	425.150	İB
424.725	IB	425.15625 *	IB
424.73125 *	IB	425.16250	İB
424.73750	IB	425.16875*	iB
424.74375 *	IB	425.175	İB
424.750	IB	425.18125*	iB
424.75625 *	IB	425.18750	IB
424.76250	IB	425.19375*	IB
	IB		IB
424.76875 *		425.200	
424.775	IB	425.20625 *	IB IB
424.78125 *	IB	425.21250	IB
424.78750	IB	425.21875 *	IB
424.79375 *	IB	425.225	IB
424.800	IB	425.23125*	IB
424.80625 *	IB	425.23750	IB
	IB	425.24375 *	IB
424.81875*	IB	425.250	PS
424.825	IB	425.25625 *	PS
424.83125 *	IB	425.26250	PS
424.83750	IB	425.26875 *	PS
424.84375 *	IB	425.275	PS
424.850	IB	425.28125*	PS
424.85625 *	IB	425.28750	PS
424.86250	IB	425.29375 *	PS
424.86875 *	IB	425.300	PS
424.875	IB	425.30625 *	PS
424.88125 *	IB	425.31250	PS
424.88750	IB	425.31875*	PS
424.89375 *	IB		PS
424.900	IB	425.325	
424.90625 *	IB	425.33125*	PS
424.91250	IB	425.33750	PS
424.91875*	IB	425.34375 *	PS
424.925	IB	425.350	PS
	IB	425.35625 *	PS
424.93125 *		425.36250	PS
424.93750	IB	425.36875 *	PS
424.94375 *	IB	425.375	PS
424.950	IB	425.38125 *	PS
424.95625 *	IB	425.38750	PS
424.96250	IB	425.39375 *	PS
424.96875 *	IB	425.400	PS
424.975	IB	425.40625 *	PS
424.98125 *	IB	425.41250	PS
424.98750	IB	425.41875 *	PS
424.99375 *	IB	425.425	PS
Single channels:		425.43125*	PS
425.000	IB	425.43750	PS
425.00625 *	IB	425.44375 *	PS
425.01250	IB	425.450	PS
425.01875 *	IB	425.45625 *	PS
425.025	IB	425.46250	PS
425.03125*	IB		
425.03750	IB	425.46875 *	PS
425.04375 *	IB	425.475	PS
405.050	IB	425.48125 *	PS
425.05625 *	IB	*This frequency will be assigned with a	an authorized hand-
425.06250		width not to exceed 6 kHz.	2011.01.200 Dalla-
425.06875 *			
		(b) [Reserved]	
425.075		(c) Base or control stati	ione chall bo
	IR		
425.08125*		located within 48 km (30 i	miles) of the
425.08750			
425.08750 425.09375 *	IB		
425.08750	IB IB	center of Buffalo or 80 km	(50 miles) of
425.08750 425.09375 *	IB IB		(50 miles) of n Cleveland,

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at locations north of line A that are within 48 km (30 miles) of the city center. In addition, low power (2 watts or less) base stations may locate within 80 km (50 miles) of the center of Buffalo. The following coordinates shall be used for the centers of these areas (coordinates are referenced to North American Datum 1983 (NAD83)):

 $\begin{array}{lll} Buffalo, & 42^{\circ}52'52.2'' \ North \ latitude. \\ NY. & 78^{\circ}52'20.1'' \ West \ longitude. \\ Cleveland, & 41^{\circ}29'51.2'' \ North \ latitude. \\ OH. & 81^{\circ}41'49.5'' \ West \ longitude. \\ Detroit, & 42^{\circ}19'48.1'' \ North \ latitude. \\ MI. & 83^{\circ}02'56.7'' \ West \ longitude. \end{array}$

(d) Mobile operation shall be confined to within 80 km (50 miles) of the centers of Detroit, Cleveland, or Buffalo.

[52 FR 6156, Mar. 2, 1987, as amended at 54 FR 38681, Sept. 20, 1989; 58 FR 31476, June 3, 1993; 58 FR 44957, Aug. 25, 1993; 60 FR 37269, July 19, 1995; 61 FR 6576, Feb. 21, 1996; 62 FR 18929, Apr. 17, 1997; 63 FR 68965, Dec. 14, 1998]

§ 90.275 Selection and assignment of frequencies in the 421-430 MHz band.

Applicants must specify the frequencies in which the proposed system will operate pursuant to a recommendation by a frequency coordinator certified for the pool in which the requested frequency is assigned.

[62 FR 18932, Apr. 17, 1997]

§ 90.279 Power limitations applicable to the 421–430 MHz band.

(a) Base station authorizations in the 421–430 MHz band will be subject to Effective Radiated Power (ERP) and Effective Antenna Height (EAH) limitations as shown in the table below. ERP is defined as the product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction. EAH is calculated by subtracting the Assumed Average Terrain Elevation (AATE) as listed in table 7 of §90.619 from the antenna height above mean sea level.

LIMITS OF EFFECTIVE RADIATED POWER (ERP)
CORRESPONDING TO EFFECTIVE ANTENNA
HEIGHTS (EAH) OF BASE STATIONS IN THE
421–430 MHz BAND

Effective antenna height (EAH) in meters (feet)	Maximum effective radiated power (ERP) (watts)
0–152 (0–500)	250
Above 152-305 (above 500-1000)	150
Above 305-457 (above 1000-1500)	75
Above 457-610 (above 1500-2000)	40
Above 610-762 (above 2000-2500)	20
Above 762-914 (above 2500-3000)	15
Above 914-1219 (above 3000-4000)	10
Above 1219 (above 4000)	5

(b) The maximum transmitter power output that will be authorized for control stations is 20 watts.

[52 FR 6157, Mar. 2, 1987, as amended at 58 FR 44957, Aug. 25, 1993]

§ 90.281 Restrictions on operational fixed stations in the 421-430 MHz

- (a) Except for control stations, operational fixed facilities will not be authorized in the 421–430 MHz band. This does not preclude secondary fixed tone signaling and alarm operations authorized in §90.235.
- (b) Control stations associated with one or more mobile relay stations will be authorized only on the assigned frequency of the associated mobile station. Use of a mobile service frequency by a control station of a mobile relay system is subject to the condition that harmful interference shall not be caused to stations of licensees authorized to use the frequency for mobile service communications.

[52 FR 6158, Mar. 2, 1987, as amended at 54 FR 38681, Sept. 20, 1989]

§ 90.283 [Reserved]

Subpart L—Authorization in the Band 470–512 MHz (UHF-TV Sharing)

§ 90.301 Scope.

This subpart governs the authorization and use of frequencies by land mobile stations in the band 470–512 MHz on a geographically shared basis with Television Broadcast stations. Under this